

**Commonwealth of Kentucky**  
**Division for Air Quality**  
***PERMIT STATEMENT OF BASIS***

DRAFT

Conditional Major / Operating

Permit: F-06-072

Ceradyne, Inc.

Lexington, KY 40511

January 4, 2007

Luis D. Fuentes

SOURCE ID:	21-067-00180
SOURCE A.I. #:	55753
ACTIVITY ID:	APE20060002

**SOURCE DESCRIPTION:**

Ceradyne, Inc. facility, located in Lexington, KY has two process areas: ceramic forms and hot press (armor plates). Ceradyne operates six different manufacturing processes on site: Heating curing and Incinerator; Grinding Booth; Shot Blast; Power Preparation; Mechanical Pressing; and Binder Removal.

State Minor Permit S-05-178 was issued to Ceradyne on October 24, 2005 for the operations listed above. A permit revision S-05-178R1 was completed on December 12, 2005 due to an increase of production rate on the Hot Press Line.

Ceradyne has submitted an application for installing a new fourth armor plate line LX4 in the hot press process area. They also plan to purchase and install the necessary support equipment for upgrading the armor plate line LX3- mini up to the same capacity as armor plate lines LX1 and LX2. The capacity of the ceramic line does not change as a result of adding line LX4.

**COMMENTS:**

Type of control and efficiency:

**1- Incinerators:**

Type: Incinerator

Make: Corbett

Model: No.090403; 3.4 mmBtu/hr

Numbers of units: 3 (Armor Plate Heating line LX1, LX2 and LX3)

Date installed: December 2004 (LX1); September 2005 (LX2); September 2006 (LX3).

Efficiency: 99.9 %

Type: Incinerator

Make: Corbett

Model: No. S-030506; 3.4 mmBtu/hr

Numbers of units: 1 (Armor Plate heating line 4)

Proposed installation date: May 2007  
Efficiency: 99.9 %

Type: Incinerator  
Make: Blue M  
Model: No. 400; 0.25 mmBtu/hr  
Numbers of units: 1 (Binder process EP54)  
Date installed: January 2006  
Efficiency: 99%

Type: Incinerator  
Make: Prydia  
Model: No. 1200; 0.4 mmBtu/hr  
Numbers of units: 1 (Binder process)  
Date installed: June 2005  
Efficiency: 99%

## **2- Dust collectors:**

Type: Modular Baghouse Dust Collector Donaldson filter  
Model: Donaldson filter  
Date installed: December 2004  
Efficiency: 99.9 %

## **3- Other filter:**

Type: Dust control filter  
Model: Mikropul CFH40TV 13000 cfm 9000sq ft filters  
Date installed: September 2004  
Efficiency: 99 %

### Emission factors, their sources and the applicable regulations:

EP number	Description	Emission factor source	Applicable regulation
EP02 EP12 EP15 EP13	Heating curing	Mass Balance Calculation	401 KAR 63:020. Potentially hazardous matter or toxic substance.
	Incinerator	AP-42 (Table 1.4-1 & 1.4-2)	401 KAR 63:020. Potentially hazardous matter or toxic substance.
EP03	Grinding booth	Mass Balance Calculation	401 KAR 59:010. New process operation.
EP04	Shot blast	Mass Balance Calculation	401 KAR 59:010. New process operation.

EP50	Powder preparation	Mass Balance Calculation	401 KAR 59:010. New process operation. 401 KAR 63:020. Potentially hazardous matter or toxic substance.
	Incinerator	AP-42 (Table 1.4-1 & 1.4-2)	401 KAR 59:015. New indirect heat exchangers.
EP51	Mechanical pressing	Mass Balance Calculation	401 KAR 59:010. New process operation.
EP52	Binder removal	Mass Balance Calculation	401 KAR 63:020. Potentially hazardous matter or toxic substance.
EP53 and EP54	Binder removal	Mass Balance Calculation	401 KAR 63:020. Potentially hazardous matter or toxic substance.
	Incinerator	AP-42 (Table 1.4-1 & 1.4-2)	

#### **EMISSION AND OPERATING CAPS DESCRIPTION:**

The facility's uncontrolled emissions of VOC may exceed 100 tons per year. The potential capacity to emit PM and HAP for all processes will not change the facility's status as a minor source of air pollutant. The incinerator shall be operating at all times to keep VOC emissions under major source thresholds and preclude the applicability of 401 KAR 52:020, *Title V permits*. See Section B of the permit for operating and emission limits pertaining to the individual emission points.

#### **PERIODIC MONITORING:**

See the permit for Specific Monitoring Requirements.

#### **CREDIBLE EVIDENCE:**

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has only adopted the provisions of 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12 into its air quality regulations.